

AMENDMENTS TO THE CLAIMS

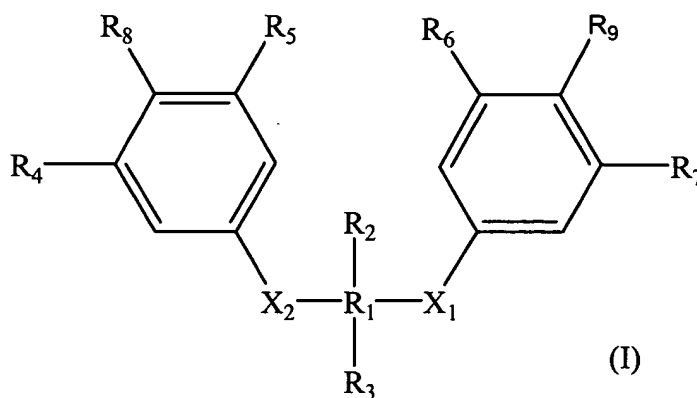
Please enter the following amendments without prejudice or disclaimer.

Please cancel claims 12-28 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

In the claims:

1. (Original) A method for the prophylactic or therapeutic treatment of a disease or disorder associated with vascular health, said method comprising administering to a subject in need of such treatment an amount effective to treat a disease or disorder associated with vascular health, of a compound of Formula (I):



wherein:

X_1 and X_2 are independently selected from the group consisting of oxy and a dialkyl substituted silyl;

R_1 is C_1 - C_4 alkyl;

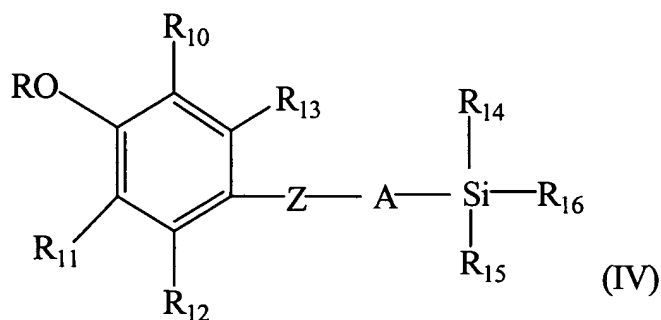
R_2 and R_3 are independently selected from the group consisting of H and a C_1 - C_4 alkyl;

R_4 , R_5 , R_6 , and R_7 are independently selected from the group consisting of H, methoxy, and a branched or straight chain C_1 - C_6 alkyl; and

R_8 and R_9 are independently selected from the group consisting of hydrogen, hydroxy, trifluoromethyl, halide, amine, alkyl, alkenyl, aryl, heteroaryl, alkanoyl, aryloyl, heteroaryloyl, $-O(C_1-C_6 \text{ alkyl})$, $-OCO-(H \text{ or } C_1-C_7 \text{ alkyl})$, $-OCO-(C_3-C_7 \text{ alkenyl})$, $-OCO-(\text{aryl})$, $-OCO-(\text{heteroaryl})$, $-(C_0-C_8 \text{ alkyl})-COOH$, $-(C_2-C_8 \text{ alkenyl})-COOH$, $-OCO-(C_0-C_6 \text{ alkyl})-COOH$, $-OCO-(C_2-C_6 \text{ alkenyl})-COOH$, $-CO-(C_0-C_6 \text{ alkyl})-COOH$, and $-CO-(C_2-C_6 \text{ alkenyl})-COOH$;

wherein when the R_8 or R_9 substituents are alkyl, alkenyl, aryl, heteroaryl, alkanoyl, aryloyl, heteroaryloyl, $-O(C_1-C_6 \text{ alkyl})$, $-OCO-(H \text{ or } C_1-C_7 \text{ alkyl})$, $-OCO-(C_3-C_7 \text{ alkenyl})$, $-OCO-(\text{aryl})$, $-OCO-(\text{heteroaryl})$, $-(C_0-C_8 \text{ alkyl})-COOH$, $-(C_2-C_8 \text{ alkenyl})-COOH$, $-OCO-(C_0-C_6 \text{ alkyl})-COOH$, $-OCO-(C_2-C_6 \text{ alkenyl})-COOH$, $-CO-(C_0-C_6 \text{ alkyl})-COOH$, or $-CO-(C_2-C_6 \text{ alkenyl})-COOH$, they may be independently substituted with one or more functionalities independently selected from the group consisting of C_1-C_6 alkyl, halogen, $-OH$, $-OCH_3$, $-OCH_2CH_3$, halomethyl, dihalomethyl, trihalomethyl, $-NH_2$, $-NO_2$, $-CN$, $-NC$, $-C(=NH)(-NH_2)$, $-SH$, $-COOH$, $-COOCH_3$, and $-COOCH_2CH_3$;

with the proviso that said compound of Formula (I) is not a compound of Formula (IV)



wherein:

R_{10} and R_{15} are each independently $C_1 - C_6$ alkyl;

R_{11} , R_{12} and R_{13} are each independently hydrogen or $C_1 - C_6$ alkyl;

R is hydrogen or $-C(O) - (CH_2)_m - Q$, wherein Q is hydrogen or $-COOH$ and m is an integer 1, 2, 3 or 4;

Z is a thio, oxy or methylene group;

A is a $C_1 - C_4$ alkylene group;

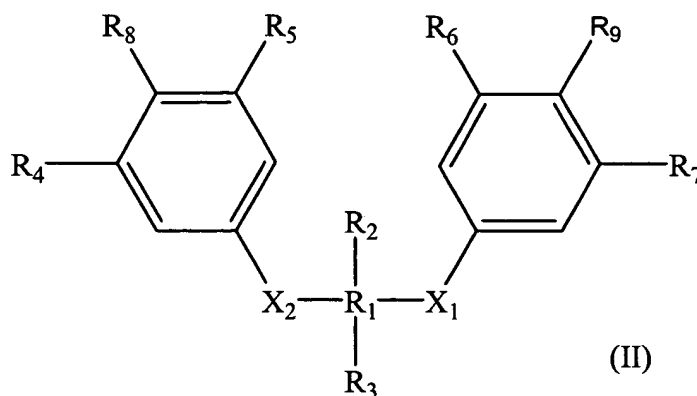
R_{14} and R_{16} are each independently a $C_1 - C_6$ alkyl or $-(CH_2)_n - (Ar)$, wherein n is an integer 0, 1, 2 or 3; and Ar is phenyl or naphthyl unsubstituted or substituted with one to three substituents selected from the group consisting of hydroxy, methoxy, ethoxy, halogen,

trifluoromethyl, $C_1 - C_6$ alkyl, or $-NR_{17} R_{18}$, wherein R_{17} and R_{18} are each independently hydrogen or $C_1 - C_6$ alkyl; with the proviso that when R_{11} and at least one of R_{14} or R_{16} is $C_1 - C_6$ alkyl, and Ar is not substituted with trifluoromethyl or $-NR_{17} R_{18}$, then R is $-C(O) - (CH_2)_m - Q$; or a pharmaceutically acceptable salt thereof.

2. (Original) The method of claim 1, wherein X_1 and X_2 are independently selected from the group consisting of oxy and dimethyl-silyl; R_1 is methylene; R_2 and R_3 are hydrogen, R_4 , R_5 , R_6 , and R_7 are independently selected from the group consisting of hydrogen and tert-butyl; and R_8 and R_9 are independently selected from the group consisting of hydroxy and methoxy.

3. (Original) The method of claim 1, wherein R_4 and R_5 are tert-butyl, and R_8 is hydroxy.

4. (Original) A method for the prophylactic or therapeutic treatment of a disease or disorder associated with vascular health, said method comprising administering to a subject in need of such treatment an amount effective to treat a disease or disorder associated with vascular health, of a compound of Formula (II):



wherein

X_1 and X_2 are independently selected from the group consisting of thio, oxy, and a dialkyl substituted silyl;

R_1 is C_1 - C_4 alkyl;

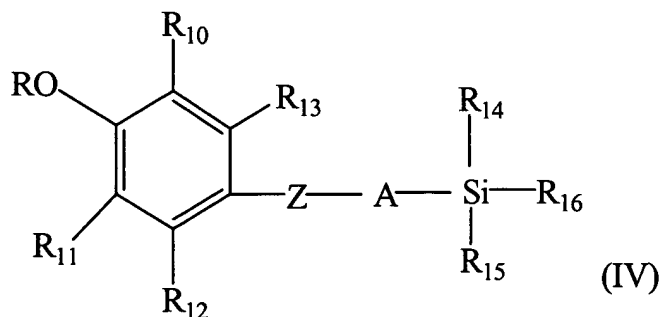
R_2 and R_3 are independently selected from the group consisting of H and a C_1 - C_4 alkyl;

R_4 , R_5 , R_6 , and R_7 are independently selected from the group consisting of H, methoxy, and a branched or straight chain C_1 - C_6 alkyl; and

R_8 and R_9 are independently selected from the group consisting of hydrogen, hydroxy, trifluoromethyl, halide, amine, alkyl, alkenyl, aryl, heteroaryl, alkanoyl, aryloyl, heteroaryloyl, $-O(C_1-C_6 \text{ alkyl})$, $-OCO-(H \text{ or } C_1-C_7 \text{ alkyl})$, $-OCO-(C_3-C_7 \text{ alkenyl})$, $-OCO-(\text{aryl})$, $-OCO-(\text{heteroaryl})$, $-(C_0-C_8 \text{ alkyl})-COOH$, $-(C_2-C_8 \text{ alkenyl})-COOH$, $-OCO-(C_0-C_6 \text{ alkyl})-COOH$, $-OCO-(C_2-C_6 \text{ alkenyl})-COOH$, $-CO-(C_0-C_6 \text{ alkyl})-COOH$, and $-CO-(C_2-C_6 \text{ alkenyl})-COOH$;

wherein when the R_8 or R_9 substituents are alkyl, alkenyl, aryl, heteroaryl, alkanoyl, aryloyl, heteroaryloyl, $-O(C_1-C_6 \text{ alkyl})$, $-OCO-(H \text{ or } C_1-C_7 \text{ alkyl})$, $-OCO-(C_3-C_7 \text{ alkenyl})$, $-OCO-(\text{aryl})$, $-OCO-(\text{heteroaryl})$, $-(C_0-C_8 \text{ alkyl})-COOH$, $-(C_2-C_8 \text{ alkenyl})-COOH$, $-OCO-(C_0-C_6 \text{ alkyl})-COOH$, $-OCO-(C_2-C_6 \text{ alkenyl})-COOH$, $-CO-(C_0-C_6 \text{ alkyl})-COOH$, or $-CO-(C_2-C_6 \text{ alkenyl})-COOH$, they may be independently substituted with one or more functionalities independently selected from the group consisting of C_1-C_6 alkyl, halogen, $-OH$, $-OCH_3$, $-OCH_2CH_3$, halomethyl, dihalomethyl, trihalomethyl, $-NH_2$, $-NO_2$, $-CN$, $-NC$, $-C(=NH)(-NH_2)$, $-SH$, $-COOH$, $-COOCH_3$, and $-COOCH_2CH_3$;

with the proviso that when said compound of Formula (II) is not a compound of Formula (IV)



wherein:

R_{10} and R_{15} are each independently $C_1 - C_6$ alkyl;

R_{11} , R_{12} and R_{13} are each independently hydrogen or $C_1 - C_6$ alkyl;

R is hydrogen or $-C(O) - (CH_2)_m - Q$, wherein Q is hydrogen or $-COOH$ and m is an integer 1, 2, 3 or 4;

Z is a thio, oxy or methylene group;

A is a $C_1 - C_4$ alkylene group;

R_{14} and R_{16} are each independently a $C_1 - C_6$ alkyl or $-(CH_2)_n - (Ar)$, wherein n is an integer 0, 1, 2 or 3; and Ar is phenyl or naphthyl unsubstituted or substituted with one to three

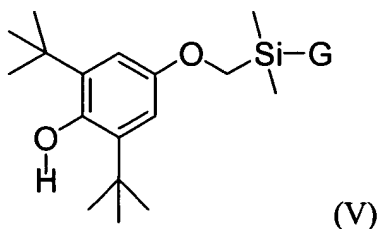
substituents selected from the group consisting of hydroxy, methoxy, ethoxy, halogen, trifluoromethyl, $C_1 - C_6$ alkyl, or $-NR_{17} R_{18}$, wherein R_{17} and R_{18} are each independently hydrogen or $C_1 - C_6$ alkyl; with the proviso that when R_{11} and at least one of R_{14} or R_{16} is $C_1 - C_6$ alkyl, and Ar is not substituted with trifluoromethyl or $-NR_{17} R_{18}$, then R is $-C(O) - (CH_2)_m - Q$; or a pharmaceutically acceptable salt thereof.

5. (Original) The method of claim 4, wherein X_1 and X_2 are independently selected from the group consisting of thio and dimethyl-silyl; R_1 is methylene; R_2 and R_3 are independently selected from the group consisting of hydrogen and methyl; R_4 , R_5 , R_6 , and R_7 are independently selected from the group consisting of hydrogen and tert-butyl; and R_8 and R_9 are independently selected from the group consisting of hydrogen, hydroxy, methoxy, and butandioate; with the proviso that when X_1 and X_2 are both thio, R_8 and R_9 are not both hydroxy.

6. (Original) The method of claim 4, wherein R_4 and R_5 are tert-butyl, and R_8 is hydroxy.

7. (Original) The method of claim 4, wherein X_1 and X_2 are thio; R_1 is methylene; R_2 and R_3 are methyl; R_4 , R_5 , R_6 , and R_7 are tert-butyl; R_8 is hydroxy; and R_9 is butandioate.

8. (Original) A method for the prophylactic or therapeutic treatment of a disease or disorder associated with vascular health, said method comprising administering to a subject in need of such treatment an amount effective to treat a disease or disorder associated with vascular health, of a compound of Formula (V):



Chemical structures illustrating various substituents and functional groups:

Row 1:

- Structure 1: A benzene ring substituted with a $-Y_1$ group and a $-N=N-N=N-$ group.
- Structure 2: A benzene ring substituted with a $-NH-NH-$ group.
- Structure 3: A benzene ring substituted with a $-N=N-NH-$ group.

Row 2:

- Structure 4: A benzene ring substituted with a $-Y_4-NH-$ group.
- Structure 5: A benzene ring substituted with a $-Y_4-N-$ group.
- Structure 6: A benzene ring substituted with a $-NH-NH-$ group.
- Structure 7: A benzene ring substituted with a $-NH-NH-NH-$ group.

Row 3:

- Structure 8: A thiophene ring substituted with a $-Y_4$ group and a $-Y_5-NH-$ group.
- Structure 9: A pyridine ring substituted with a $-NH-NH-$ group.
- Structure 10: A pyridine ring substituted with a $-NH-NH-$ group.

Row 4:

- Structure 11: A benzene ring substituted with a $-O-CH_2-CH_2-O-$ group.
- Structure 12: A benzene ring substituted with a $-NH-CH_2-CH_2-N-$ group.
- Structure 13: A benzene ring substituted with a $-NH-C(=O)-O-CH_2-CH_2-N-$ group.

Row 5:

- Structure 14: A thiophene ring substituted with a $-Y_4$ group and a $-Y_5-NH-$ group.
- Structure 15: A benzene ring substituted with a $-NH-S(=O)_2-Y_6$ group.
- Structure 16: A benzene ring substituted with a $-N=N-NH-$ group.

Row 6:

- Structure 17: A benzene ring substituted with a $-L-CO_2H$ group.
- Structure 18: A benzene ring substituted with a $-HN-Y_{10}$ group.
- Structure 19: A benzene ring substituted with a $-HN-OH$ group.

Row 7:

- Structure 20: A benzene ring substituted with a $-NH-C(=O)-O-CH_2-CH_2-O-$ group.
- Structure 21: A benzene ring substituted with a $-NH-C(=O)-Y_9$ group.
- Structure 22: A benzene ring substituted with a $-O-C(=O)-L-CO_2H$ group.

Y₁ is -H, C₁-C₄ alkyl, or C₃-C₆ alkenyl;

Y_2 is $-H$, C_1 - C_4 alkyl, or C_3 - C_6 alkenyl, aryl, heteroaryl, aryloyl, alkanoyl, or heteroaryloyl;

Y_3 is $-H$, $-CN$, C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl or heteroaryl;

Y_4 is $(CH_2)_n$, where n is 0-4, or C_2 - C_6 alkenyl;

Y_5 is NH , $(CH_2)_n$, where n is 0-4, or C_2 - C_6 alkenyl;

Y_6 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

Y_7 is H , C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl, or NH
 Y_8 ;

Y_8 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

Y_9 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, or heteroaryl;

Y_{10} is alkyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

L is C_1 - C_6 alkyl or C_2 - C_6 alkenyl; and

wherein G may be additionally substituted with one or more substituents independently selected from the group consisting of $-F$, $-Cl$, $-Br$, $-I$, $-NH_2$, $-OH$, $-CN$, $-SH$, $-CH_3$, $-CH_2CH_3$, $-CF_3$, $-OCH_3$, $-OCH_2CH_3$, $-COOH$, $-COOCH_3$, and $-COOCH_2CH_3$.

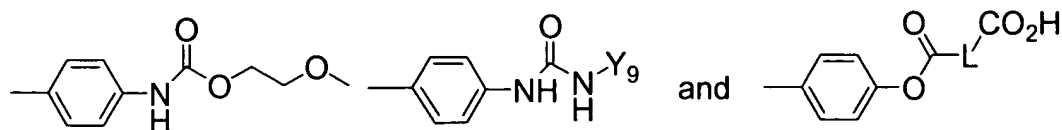
9. (Currently Amended) A method according to ~~any of claims~~ claim 1 to 8, wherein said disease or disorder associated with vascular health is selected from the group consisting of: major adverse cardiac events, vascular access dysfunction, and male erectile dysfunction.

10. (Currently Amended) A method according to ~~any of claims~~ claim 1 to 9, wherein said subject is selected from the group consisting of a hemodialysis patient, an end stage renal disease patient, or a diabetic patient.

11. (Currently Amended) A method according to ~~any of claims~~ claim 1 to 10, wherein said subject is a subject having an increased oxidative burden or elevated oxidative stress, a subject having a vascular access shunt or graft, or a subject suffering from diabetes and experiencing erectile dysfunction or seeking prophylactic therapy.

12-28. (Canceled).

CC(C)(C)c1cc(OC[Si](C)(C)C)ccc1C(C)(C)O (V)[illegible]



wherein:

Y_1 is $-H$, C_1 - C_4 alkyl, or C_3 - C_6 alkenyl;

Y_2 is $-H$, C_1 - C_4 alkyl, or C_3 - C_6 alkenyl, aryl, heteroaryl, aryloyl, alkanoyl, or heteroaryloyl;

Y_3 is $-H$, $-CN$, C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl or heteroaryl;

Y_4 is $(CH_2)_n$, where n is 0-4, or C_2 - C_6 alkenyl;

Y_5 is NH , $(CH_2)_n$, where n is 0-4, or C_2 - C_6 alkenyl;

Y_6 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

Y_7 is H , C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl, or NH

Y_8 ;

Y_8 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

Y_9 is C_1 - C_4 alkyl, C_3 - C_6 alkenyl, aryl, or heteroaryl;

Y_{10} is alkyl, aryl, heteroaryl, alkylaryl, or alkylheteroaryl;

L is C_1 - C_6 alkyl or C_2 - C_6 alkenyl; and

wherein G may be additionally substituted with one or more substituents independently selected from the group consisting of $-F$, $-Cl$, $-Br$, $-I$, $-NH_2$, $-OH$, $-CN$, $-SH$, $-CH_3$, $-CH_2CH_3$, $-CF_3$, $-OCH_3$, $-OCH_2CH_3$, $-COOH$, $-COOCH_3$, and $-COOCH_2CH_3$;

and a pharmaceutically acceptable excipient.

30. (Original) The pharmaceutical composition of claim 29, wherein said compounds of Formula (V) are formulated for oral administration in a self-emulsifying drug delivery system.

31. (Original) The pharmaceutical composition of claim 29, further comprising one or members of the group consisting of lactose, calcium phosphate, kaolin, glycerin, propylene glycol, polyethylene glycol, peanut oil, liquid paraffin, olive oil, sodium carboxymethylcellulose, methylcellulose, hydroxypropyl methylcellulose, sodium alginate, polyvinylpyrrolidone, gum

tragacanth, gum acacia; dispersing agents, wetting agents, and thickening agents.

32. (Currently Amended) The pharmaceutical composition of ~~any one of claims~~ claim 29 ~~to 31~~, further comprising one or more other active ingredients useful in the prophylactic or therapeutic treatment of major adverse cardiac events.

33. (Currently Amended) The pharmaceutical composition of ~~any one of claims~~ claim 29 ~~to 31~~, further comprising one or more other active ingredients useful in the prophylactic or therapeutic treatment of vascular access dysfunction.

34. (Currently Amended) The pharmaceutical composition of ~~any one of claims~~ claim 29 ~~to 31~~, further comprising one or more other active ingredients useful in the prophylactic or therapeutic treatment of erectile dysfunction.

35. (New) A method according to claim 4, wherein said disease or disorder associated with vascular health is selected from the group consisting of: major adverse cardiac events, vascular access dysfunction, and male erectile dysfunction.

36. (New) A method according to claim 4, wherein said subject is selected from the group consisting of a hemodialysis patient, an end stage renal disease patient, or a diabetic patient.

37. (New) A method according to claim 4, wherein said subject is a subject having an increased oxidative burden or elevated oxidative stress, a subject having a vascular access shunt or graft, or a subject suffering from diabetes and experiencing erectile dysfunction or seeking prophylactic therapy.

38. (New) A method according to claim 8, wherein said disease or disorder associated with vascular health is selected from the group consisting of: major adverse cardiac events, vascular access dysfunction, and male erectile dysfunction.

39. (New) A method according to claim 8, wherein said subject is selected from the group consisting of a hemodialysis patient, an end stage renal disease patient, or a diabetic patient.

40. (New) A method according to claim 8, wherein said subject is a subject having an increased oxidative burden or elevated oxidative stress, a subject having a vascular access shunt or graft, or a subject suffering from diabetes and experiencing erectile dysfunction or seeking prophylactic therapy.